

These questions are due by the end of the week. 10/10 points towards your assessment grade if you get them all right and have the math work on paper to back up your work.

You will receive zero points and fail the assignment if you are asked for your work on paper and can not produce that effort. Missing some part of the assignment will cause a loss of that percent of the overall assignment.

These weekly problems cannot be attempted a second time and the work must be turned in on time, not later in the day, not during remediation, and not the next day.

You should work on these problems throughout the week and use down time in class to work with your teams on the solution to these problems.

1.

**Standard A1.1.3.2.1**

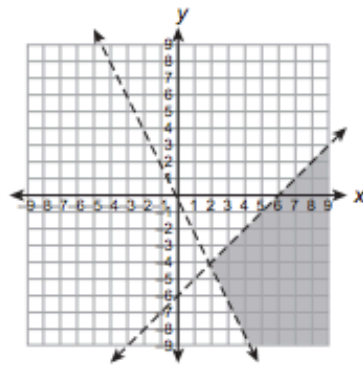
A system of inequalities is shown below.

$$y < x - 6$$

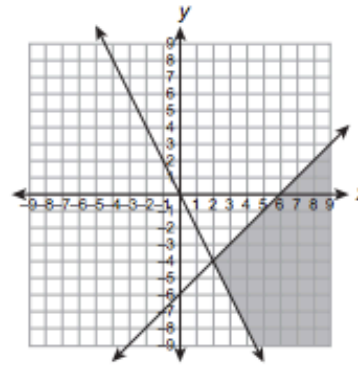
$$y > -2x$$

Which graph shows the solution set of the system of inequalities?

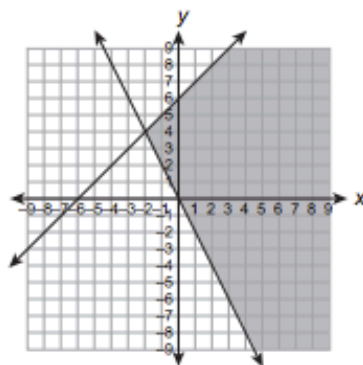
A.



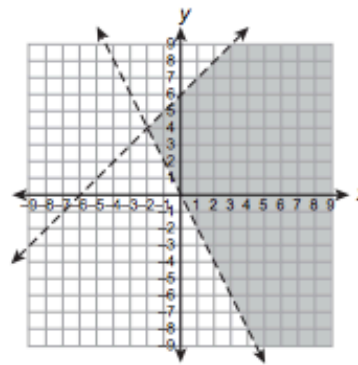
B.



C.



D.



2.

**Standard A1.1.3.2.2**

Tyreke always leaves a tip of between 8% and 20% for the server when he pays for his dinner. This can be represented by the system of inequalities shown below, where  $y$  is the amount of tip and  $x$  is the cost of dinner.

$$y > 0.08x$$

$$y < 0.2x$$

Which of the following is a true statement?

- A. When the cost of dinner ( $x$ ) is \$10, the amount of tip ( $y$ ) must be between \$2 and \$8.
- B. When the cost of dinner ( $x$ ) is \$15, the amount of tip ( $y$ ) must be between \$1.20 and \$3.00.
- C. When the amount of tip ( $y$ ) is \$3, the cost of dinner ( $x$ ) must be between \$11 and \$23.
- D. When the amount of tip ( $y$ ) is \$2.40, the cost of dinner ( $x$ ) must be between \$3 and \$6.

3.

**Standard A1.1.3**

An apple farm owner is deciding how to use each day's harvest. She can use the harvest to produce apple juice or apple butter. The information she uses to make the decision is listed below.

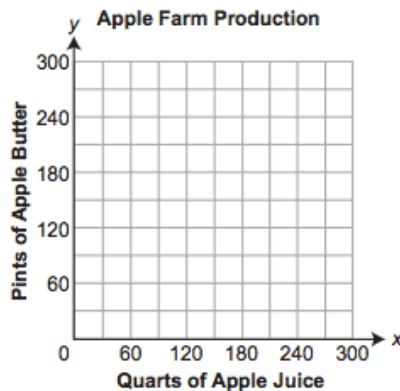
- A bushel of apples will make 16 quarts of apple juice.
- A bushel of apples will make 20 pints of apple butter.
- The apple farm can produce **no more than** 180 pints of apple butter each day.
- The apple farm harvests **no more than** 15 bushels of apples each day.

The information given can be modeled with a system of inequalities. When  $x$  is the number of quarts of apple juice and  $y$  is the number of pints of apple butter, two of the inequalities that model the situation are  $x \geq 0$  and  $y \geq 0$ .

- A. Write two more inequalities to complete the system of inequalities modeling the information.

inequalities: \_\_\_\_\_

- B. Graph the solution set of the inequalities from **part A** below. Shade the area that represents the solution set.



The apple farm makes a profit of \$2.25 on each pint of apple butter and \$2.50 on each quart of apple juice.

- C. Explain how you can be certain the maximum profit will be realized when the apple farm produces 96 quarts of apple juice and 180 pints of apple butter.